

Effects on organizational context (culture and climate) from implementing a 360-degree feedback system: The case of Arcelik

Nihal Mamatoglu

Department of Psychology, Abant Izzet Baysal University, Bolu, Turkey

The current study aims to investigate the impact of the 360-degree feedback system (DFS) on organizational context (culture and climate). This longitudinally designed study was conducted at the Arcelik Cooking Appliances Plant in Turkey with 77 white-collar workers. 360-DFS was based on relevant literature and feedback given to the employees by The Arcelik Competency Model. Results have shown that the 360-DFS has effects on organizational context (e.g., employees' perceptions regarding support and achievement culture). The results have also revealed some significant effects on the participants' perception of the communication and performance appraisal system in the organization.

Keywords: Organizational context; Organizational culture; Organizational climate; 360-degree feedback; Multisource feedback; Organizational communication; Performance appraisal.

Employees in many organizations have acquired greater autonomy with new work roles, as work team members (e.g., in manufacturing), as knowledge workers (e.g., software engineers), or in other ways (e.g., empowered customer representatives in financial services). These changes raise difficult questions about how to manage these workers. Older “command and control” notions of management are widely held to be inappropriate for both motivational and practical reasons, because *less* direct control

Correspondence should be addressed to Nihal Mamatoglu, Abant Izzet Baysal University, Faculty of Sciences and Literatures, Department of Psychology, 14280 Golkoy, Bolu, Turkey. E-mail: mamatoglu_n@ibu.edu.tr; mamatoglunihal@yahoo.com

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promotes *more* psychological ownership of one's work products along with the flexibility for employees to do whatever is required on the organization's front lines for speed, quality, and customer satisfaction (Barney, 2004).

In recent years, while there has been an increasing interest in the empowerment of employees in organizations, the practice of multisource or "360-degree" feedback has been widely adopted (Brutus & Derayeh, 2002). Multisource feedback can align an organization's promotion of empowerment with the organization's performance measurement and evaluation procedures. Much of the philosophy behind multisource feedback is to manage employees by instilling priorities (emphasizing "ends" such as effects of employees' behaviours on customers) instead of closely supervising individuals (emphasizing "means to ends").

This study, therefore, sets out to explore whether the effects of adopting 360-degree feedback extend beyond this immediate, intended effect of focusing employees' efforts on the dimensions of performance contained in a 360-degree feedback instrument. Specifically, the study investigates whether implementation of a 360-degree feedback process has any effect on employees' perceptions of workplace characteristics, or context encompassed by the concepts of organizational climate and culture.

In the remainder of the introduction, concepts of organizational culture, climate, and 360-degree feedback, will each be described as a background to this study. Finally, the specific rationale underlying the study will be presented, including a review of related past studies.

ORGANIZATIONAL CULTURE

Although organizational culture is a highly popular concept in both scholarly and popular management literature, it remains difficult, even contentious, to define and describe. A representative definition, appropriate to the present study, is provided by Deshpande and Webster (1989, p. 2): "The pattern of shared values and beliefs that help give the member of an organization meaning, and provide them with the rules for behaviour in the organization". In order to specify cultures, some researchers have tried to construct a model for organizational culture, such as a typology (Bloor & Dawson, 1994; Cook & Rousseau, 1988; Harrison, 1972; Hofstede, Neujen, Ohayn, & Sanders, 1990; Martin, 1992; Wallach, 1983). According to Harrison's (1972) typology, for instance, which was used in this study, there are four cultural ideologies in organizations, these being achievement, hierarchy, support, and power cultures.

While the debates on the nature of organizational culture have continued, cultural change approaches and studies have been of great interest in the literature (Deal & Kennedy, 1982; Kilmann, 1985, 1990; Kilmann, Saxton, & Serpa, 1985; Martin & Siehl, 1983; Michela & Burke, 2000; Ouchi, 1981;

Peters & Waterman, 1982; Pettigrew, 1979; Rogers & Rogers, 1976; Schein, 1985a, 1985b, 1990; Schwartz & Davis, 1981; Valesques, Moberg, & Cavanaugh, 1983; Wilkins & Patterson, 1985). These and other sources indicate that cultural change is a challenging process, requiring planning, time, and actions that may include communication, training, and redesign of the reward system, among others. Different authors have emphasized different actions; some have argued that the sources and boundaries of understandings in an organization should be clearly identified (Wilkins & Patterson, 1985). A key point to emerge here is that explicit and latent assumptions, shared beliefs, and shared rules are important in order to create the culture (Deal & Kennedy, 1982; Ouchi, 1981; Peters & Waterman, 1982). Other writers have recommended marshalling the rites and ceremonies of the organization (such as symbols, language, gestures, physical settings, artifacts, rituals, myths, sagas, legends, stories, and folk tales) towards culture change (Trice & Beyer, 1985). Still others have argued that norms are essential in the culture creation process (Kilmann, 1985, 1990). As far as leadership is concerned, leadership not only affects the organizational culture, but is also affected by the culture itself (Schein, 1985b; Trice & Beyer, 1985).

ORGANIZATIONAL CLIMATE

As with organizational culture, the concept of organizational climate has resisted definition, yet has remained of interest for approximately 40 years (Katz & Kahn, 1966; Litwin & Stringer, 1968). In contrast to *culture*, which emphasizes common values, understandings, and norms in an organization, *climate* emphasizes individual employees' perceptions of the organizational attributes that give rise to motivation, norms, behaviour, and culture itself (Michela & Burke, 2000; Ostroff, Kinicki, & Tamkins, 2003). The individual nature of perceptions of the organization is particularly emphasized in the distinction between "organizational" and "psychological" climate that was suggested by James and Jones (1974). This distinction has been widely accepted as one aspect of the difference between organizational culture and climate. Other distinctions have been discussed by Denison (1996), such as the more frequent use of questionnaires, or other quantitative approaches in climate research, and the more frequent use of qualitative, interpretative approaches in culture research.

However, after scrutinizing various differences between the culture and climate traditions of organizational analysis, Denison (1996) has concluded that "the culture and climate literatures actually address a common phenomenon: the creation and influence of social contexts in organizations" (p. 646). Accordingly, the present study examines whether key features of

the organizational context are changed (or in Denison's terms, created) when a 360-degree feedback process is introduced into an organization. These features were selected from a scheme for conceptualizing organizational culture dimensions (Handy, 1985; Harrison, 1972; Harrison & Stokes, 1992). They were measured by means of a survey questionnaire analysed at the individual employee level of analysis, consistent with the tradition of organizational climate research and theory.

A climate-type instrument to assess perceptions of the organizational context can also measure the perceptions of culture, when items of the instrument concern the stuff of culture such as norms (how we do things around here) and values (how people are expected to behave) as in the present study. Even though the findings of the study pertain most directly to individual perceptions of change, they also pertain to culture change *per se* to the extent that statistically significant differences in perceptions are obtained across time (i.e., a longitudinal effect). This is because detection of a significant longitudinal effect requires a degree of consensus among members of the study group, and the consensus is one aspect of culture itself. Thus, the concepts of culture and climate, which Denison referred to as "organizational context", have been interchangeably used in this article.

360-DEGREE FEEDBACK SYSTEMS

This study examined the effect on perceptions of organizational context (climate and culture aspects) after implementing a multisource or 360-degree feedback system (360-DFS). When such a system is used by organizations for developing their employees (London & Smither, 1995; Waldman & Atwater, 1998), it is frequently called 360-degree feedback. When it is used for administrative purposes, such as performance appraisal, job placement, pay decisions, and downsizing, it is often called Multi Sources Assessment (MSA; Cleveland, Murphy, & Williams, 1989; Dalton, 1996). Within these systems, in order to assess perceptions of a person's behaviour and the impact of that behaviour, commonly a questionnaire is utilized. In contrast to most questionnaire-based assessments, the focus is not on respondents, but on employees (management or nonmanagement) about whom questions are asked. The respondents may be the employee's boss or bosses, direct reports, colleagues, fellow members of project teams, internal and external customers, and suppliers (Antonioni, 1995; Atwater, Waldman, & Brett, 2002; Bracken, Timmrech, Fleenor, & Summers, 2001; Church & Bracken, 1997; Church & Wacławski, 1998, 2001; Lepsinger & Lucia, 1998; London, 1997; Ludeman, 2000; Waldman & Atwater, 1998; Wimer & Nowack, 1998; Yammarino, 2003).

Why should a 360-DFS be expected to affect organizational context (i.e., culture or climate)? One basis for expecting such an effect is the evidence for the effects of giving such feedback upon perceptions of performance appraisal (e.g., Atwater et al., 2002) and upon individual, executive, and organizational development (e.g., Church, Wacławski, & Burke, 2001; Day, 2001). A research study, for example, conducted at a hospital in the neighbourhood of New York, involved designing, implementing, and evaluating a leadership development programme having a multisource feedback component (Barriere, Anson, Ording, & Rogers, 2002). In that study, Barriere and his colleagues centred on behaviours essential to an innovative and adaptive culture. All managers received feedback about their competencies or behaviours related to innovative and adaptive culture in that study. Barriere et al. expected that the leaders would improve their behaviours after the leadership development programme. In the study, behavioural changes from leaders were expected to become a model for employees, as well as reinforcement of behaviours of employees by their leaders as the employees perform their work. It was also expected that the leaders' and employees' behavioural changes would create behavioural norms, which, in turn, would affect organizational culture. The findings of the study supported the expectations of the authors. They found that cultural transformation occurred slightly, over time, by using a 360-degree feedback system in leadership development programmes; it means the organization became more innovative and adaptive than before.

In contrast to the aim of the present study that seeks for broader culture or climate effects of a 360-DFS implementation, many studies have focused on individual level effects of 360-DFS (Levy, Cawley, & Foti, 1998; London, Wohlers, & Gallagher, 1990; Smither, Wohlers, & London, 1995). Along these lines, Harris (1994) offered a social-motivational explanation of how 360-degree performance feedback affects individual behaviour change. Harris claimed that accurate feedback to a target person motivates the person who receives the feedback to make positive (group- and organization-facilitative) changes for personal development and performance improvement. A part of the source of this motivation may be cognitive dissonance (Festinger, 1957) involving a discrepancy between "who" the employee wants to be and how he or she is seen. Although initial resistance and rejection of the feedback often occurs, these reactions can fade over time (Lewin, 1958; London, 1997), especially if a path to reducing the discrepancy is provided through training, coaching, or other means. Moreover, receiving feedback enhances self-awareness (Argyris, 1970; Bion, 1959; Lewin, 1958), which reduces the need for an imposed regimen of assessment and feedback. On the other hand, it is also known that a 360-DFS process provides information for employees about their strong and developmental areas, as well as supporting them to set their work and

personal goals, and showing the way to make personal development plans in order to improve their job performance (London & Smither, 1995; Waldman & Atwater, 1998). Ultimately, people may start to seek feedback to develop themselves.

However, individual processes like these unfold in a broader context and can have ripple effects. For example, if feedback-seeking behaviour becomes more prevalent, this increase in communication may lead employees to feel closer to one another, or to trust each other more than before. Additionally, as employees arrive at well-defined personal development plans based on accurate feedback, they may increase their efforts to achieve their goals. Then, at the group or organizational level, higher performance standards can be achieved in the organization. Furthermore, as people receive performance feedback in a 360-DFS not only from their superiors, but also from other sources such as subordinates, peers, and customers, they may feel a reduction in the managerial power over them. These kinds of changes may be conceived as changes in organizational context, such as changes in cultural orientation or in climate perception.

To recapitulate, the evidence for the present study would suggest that having feedback about one's work performance from different sources (people from different levels of organization) may have an effect on organizational context in terms of facilitating communication between employees, promoting participation, and increasing level of trust and satisfaction. Similarly, Hall, Leidecker, and DiMarco, (1996) and Waldman and Atwater (1998) have stated this substantial impact in their 360-DFS and organizational culture studies.

Another reason to make a connection between a 360-DFS and organizational context stems from the considerable overlap in their purposes and their approach. As noted earlier, 360-DFS and culture management both seek to influence the behaviour of employees by providing general principles or priorities that individuals are supposed to apply to their particular situation. Leaders of an organization, for example, might be in favour of adopting various practices and orientations from total quality management (TQM). On the culture management side, these leaders might articulate desired norms and values (for teamwork, management by fact, etc.) as part of the organizational change effort. On the 360-DFS side, questionnaire items would be developed to assess the perceptions of employees as team players, as "acquirers" and users of data, and so forth. Both the cultural communications and the questionnaire items are necessarily generalized so that they will be relevant to as many employees as possible. However, if the organizational change effort is well conceived and executed, the cultural messages, the 360-DFS process, and other organizational processes and systems will be aligned towards the desired direction of change (Michela & Burke, 2000).

THE PRESENT STUDY

Accordingly, this study examined longitudinally the impact of a 360-DFS on organizational context (culture and climate). Data were collected on the perceptions of organizational communications and effectiveness of the performance appraisal system in the organization. Naturally the predictions of this research, mentioned later, assume sensitive and otherwise effective implementation of the 360-DFS processes, which is sometimes lacking (e.g., Bracken et al., 2001; Church & Bracken, 1997; Church & Wacławski, 2001; Ludeman, 2000; Yammarino, 2003). The implementation, carried out in connection with this study, is described in the Method section.

For the purposes of this study, the key aspects of organizational context were identified from Harrison's (1972; Harrison & Stokes, 1992; Sriram, 1997) model, which consists of four cultural ideologies: achievement, support, hierarchy, and power. According to Harrison, in an achievement culture, organizational success is the most important. Different kinds of working strategies including teamwork are used for obtaining the best organizational results. Therefore, having expertise is more important than various other characteristics such as personal or positional power of the employees. In relation to this, a 360-DFS seeks to improve work competencies or potential and organizational development of employees and executives in an organization (Barriere et al., 2002; Burke, Richley, & DeAngelis, 1985; Hazucha, Hezlett, & Schneider, 1993; Walker & Smither, 1999). Therefore, given these considerations, the hypothesis that underlies the present study is the following:

Hypothesis 1: The degree of perception regarding achievement culture would increase after the application of the 360-DFS, as compared to the degree before the application.

In a support culture, the person (employee) is central, and the aim of an organization having this type of culture is to help and serve the person's needs. Because a 360-DFS aims to create a mutual feedback atmosphere and to reinforce effective communication among members of an organization, it was hypothesized that:

Hypothesis 2: The degree of perception about support culture would increase after the application of the 360-DFS, as compared to the degree before the application.

According to Harrison (1972; Harrison & Stokes, 1992; Sriram, 1997), power culture exists when decisions depend only on the boss's judgement

in an organization. This culture is centrally managed and does not have any rule or hierarchy in itself. It was expected in the present study that a 360-DFS feedback process would deemphasize the central roles of the bosses; therefore, it would reduce perceptions of the organization as having a power culture. The reason for such an expectation comes from the definition of a 360-DFS, that is, in this system perceptions about a person's behaviour and the impact of that behaviour are collected from the person's supervisor(s), subordinates, colleagues, fellow members of project teams, customers, and suppliers (e.g., Church & Bracken, 1997; Church & Wacławski, 1998; London, 1997; Wimer & Nowack, 1998). It was hypothesized that:

Hypothesis 3: The degree of perception about power culture would decrease after the application of the 360-DFS, as compared to the degree before the application.

In a hierarchy culture, work roles and rules are clearly defined. The tasks are given to one who does it well in the organization. The position held by a person is more important than the person itself. There is no rationale for emphasizing the relationship between a 360-DFS application and hierarchy culture. Thus, in this study, no increase or decrease in perception of hierarchy culture after the application was expected.

The organizational culture typology used in this study addresses only indirectly a key aspect of organizational context that is closely tied to 360-DFS, namely communication (upward and downward communication). Lawler, Hall, and Oldham (1974) have stated that the communication pattern in organization has an immediate impact on the individual life in that organization. On the other hand, Muchinsky (1977) has shown that certain dimensions of organizational communication were strongly related with organizational context/climate. Muchinsky's study also revealed that the respondents who have a positive feeling about communication in an organization also have positive feelings towards organizational climate, management in general, and the way employees identify themselves with the organization. Thus, if something is changed in the perception of organizational context, there should be a change in the perception on organizational communication. Therefore, the study included assessment of how a 360-DFS application affects the communication atmosphere in an organization. Again assuming (and seeking to ensure) a responsible implementation of the 360-DFS system, it was hypothesized that:

Hypothesis 4: The degree of perception about the communication would be enhanced after the application of the 360-DFS as compared to before the application.

In some studies in the literature, 360-DFS has been used as a performance appraisal system in organizations (Antonioni, 1996; Atwater et al., 2002; Atwater & Yammarino, 1992; Edwards & Ewen, 1996; Lepsinger & Lucia, 1997, 1998; Levy et al., 1998; Waldman & Atwater, 1998). The basic rationale for using 360-DFS for performance appraisal is that validity of assessment of individual performance is enhanced because the different levels of evaluation perspectives provide unique information about an employee (Borman, 1998). In the organization where this study was conducted, the 180-degree performance appraisal system was used previously for performance appraisal. The point to make here is that only the managers evaluated their subordinates' performances. The employees were already familiar with the 180-degree performance appraisal system, and then were introduced to 360-DFS during this research. It should be noted that 360-DFS was not used for performance evaluations in this study, consistent with how 360-DFS has been used elsewhere for personal, managerial, and organizational development (Atwater & Waldman, 1998; Burke et al., 1985; Church, Jawitch, & Burke, 1995; Church & Waclawski, 1999; Church et al., 2001; Dalton, 1996; Day, 2001; Walker & Smither, 1999). Despite the developmental purpose of 360-DFS usage, it was of interest to learn whether there was any difference in employees' perceptions of the performance appraisal system after the application of 360-DFS in this study. Specifically, it was hypothesized that the degree of perception regarding effectiveness of the *present* performance appraisal system (which was distinct from the 360-DFS system implemented in connection with this research) would decrease after the application of the 360-DFS, as compared to the degree before the application. The reason for this is the realization of the fact that there might be a more effective appraisal system than the present one. Therefore, it was hypothesized that:

Hypothesis 5: The degree of perception about effectiveness of the *present* performance appraisal system would decrease after the application of the 360-DFS, as compared to the degree before the application.

METHOD

Participants

The research was conducted at the Arcelik Cooking Appliance Plant (CAP) in Turkey with 77 white-collar workers consisting of 15 (19%) females and 62 males (81%). The age of the sample ranged from 25 to 52 years ($M = 34.6$, $SD = 6.6$) with a median of 32. Seniority range from 1 to 23 years ($M = 9.4$, $SD = 5.52$) with a median of 5.

Measurement scales

Organizational Culture Typology Scale. The Organizational Culture Typology Scale (OCTS) was used to assess organizational culture perception in this study. It is a 16-item, Likert-type scale designed by Mamatoglu (2004). The response options for the OCTS range from “never” (1) to “always” (5). An exploratory factor analysis with Varimax rotation indicated that the scale had four factors, which were power, hierarchical, achievement, and support. The score from each subscale, calculated as the mean of the ratings for the items for that give the strength of perception in that cultural type. The internal consistency of OCTS was examined and the results showed that Cronbach’s alphas of the achievement, power, support, and hierarchy factors were .81, .65, .77, and .70, in order. The general Cronbach’s alpha of OCTS was .75. The test/retest reliability (after an interval of 3 weeks) of it was .88 ($p < .001$). The construct validity of OCTS was examined in three different organizations (nonprofit organization, private organization, and government organization) and it was found that achievement ($F = 28.35$, $p < .001$), support ($F = 14.41$, $p < .001$), hierarchical ($F = 13.85$, $p < .001$), and power ($F = 19.14$, $p < .001$) cultures subscale scores were significantly different in three organizations.

Pasa’s (2000) Leader Behaviour Scale was used with OCTS to find out the criterion related validity of OCTS. The analysis revealed that there were relationships between leaders’ behaviours and organizational culture types. To give an example, achievement culture was significantly related with “team constructing and sharing leader behaviour” ($r = .42$, $p < .001$), “hierarchical and task oriented leader behaviour” ($r = .34$, $p < .001$), and “paternal leader behaviour” ($r = .29$, $p < .001$).

The following items can be given as examples: for achievement culture, “Speed of response, sensitivity, and innovation are important sources to achieve organizational success”; for hierarchical culture, “The organization has a stable structure that can not be affected easily from the changes occurred outside”; for support culture, “Helping each other is important in the organization”; for power culture, “Personal decisions of people in authority are stressed more than the group decision”.

Communication and Performance Appraisal Perception Scale. The Communication and Performance Appraisal Perception Scale (CPAPS) was designed to assess employees’ perceptions about communication atmosphere and effectiveness of the organization’s performance appraisal system (Mamatoglu, 2005). It is a 12-item Likert-type scale and the exploratory factor analysis indicated that the scale had two factors: namely communication and performance appraisal. The anchor points of the scale range from “never” (1) to “always” (5). The score from each subscale gives

the strength of perception in that subscale. The Cronbach's alphas of the communication and performance appraisal system subscales were .80 and .88, in order. The general Cronbach's alpha of CPAPS was .89. The test/retest reliability of CPAPS (after an interval of 3 weeks) score was .89 ($p < .001$). The construct validity of CPAPS was examined in three different organizations (a public university, a private organization, and a public hospital). At the end of analysis it was found that communication, $F(2, 76) = 9.08$, $p < .000$, and performance, $F(2, 76) = 4.21$, $p < .018$, subscale scores were significantly different in the three organizations. The Leader Behaviour Scale (Pasa, 2000) was used with CPAPS to find out the criterion-related validity. At the end of the analysis, relationships were found between the leader behaviours and CPAPS; for example, communication subscale was significantly related with "team constructing and sharing leader behaviour" ($r = .57$, $p < .000$), "hierarchical and task oriented leader behaviour" ($r = .29$, $p < .010$), and "paternal leader behaviour" ($r = .48$, $p < .000$).

The following items can be given as examples to illustrate the measure of perception of communication atmosphere: "The suggestions of employees about job improvement are evaluated by the organization carefully." For perception of effectiveness of the performance appraisal system: "Performance appraisals are fair", "The performance appraisal system provides employees with the information about their weaknesses", and "Performance objectives are settled by means of considering employees' opinions."

Procedure

This study was conducted in an organization and sought to follow recommendations in the 360-DFS implementation literature (Antonioni, 1995; Atwater et al., 2002; Bracken et al., 2001; Church & Bracken, 1997; Church & Waclawski, 1998, 2001; Lepsinger & Lucia, 1997, 1998; Ludeman, 2000; Waldman & Atwater, 1998; Wimer & Nowack, 1998; Yammarino, 2003).

First, the Arcelik Competency Model was developed and adapted into a software program to assess employees' and managers' competencies before the study started. The Arcelik Competency Model is a private model for Arcelik. It comprises "core", "leadership", and "functional" competencies. Each competency heading has several subheadings; for example, under core competencies there are "team spirit and collaboration", "customer orientation", "continues development and quality orientation", "communication and developing relationship", etc.; under the leadership heading there are "strategic management", "team construction", "risk taking", etc.; and under functional competencies there are "product development", "production", "finance management", "human resources", etc. These

subheadings have some behavioural indicators; for example, under the “core competency” heading there is a “customer orientation” subheading and there are four behaviours under this subheading such as “defines the customer needs properly on time”. Each behavioural indicator is rated with a 5-point Likert-type scale. The anchor points of the scale range from “never agree” (1) to “completely agree” (5). Assessors may rate the behavioural items as nonapplicable, if they do not find the behavioural items suitable for the person that assessed his or her tasks. On the other hand, when they rate on extreme points like “1” and “5”, they must provide an explanation and give the behavioural examples for the person that is being assessed.

Because sincerity and behaviours of leaders are thought to be important for creating changes in organizational context, and for the 360-DFS implementation, all stages of the implementation and the study were performed collaboratively with the top management. On the other hand, employees’ commitment is seen to be as crucial as leaders’ sincerity. For this reason, the study started with a letter signed by the Director of Arcelik CAP. In the letter, the director presented the aim of 360-DFS as development, rather than evaluation. In addition, the director stated the timetable for the 360-DFS implementation (dates of training, assessments, sharing reports, etc.), and provided the employees with a supportive managerial message.

The two interdependent training programmes, which were developed in line with the recommendations of the 360-DFS implementation literature, were given to the participants. In the same week that the top manager’s letter was electronically mailed, all of the employees were accepted into the first training programme, organized into four groups with 20 people in each of them. At the beginning of the first programme, the Organizational Culture Typology Scale (OCTS) and the Communication and Performance Appraisal Perception Scale (CPAPS) were administered. In this programme, 360-DFS was presented; the expectation from this system, benefits of the system for both organization and employee’s self development, and assessor biases and prevention of the biases were discussed; and the participants were trained to give feedback on a computer. Therefore, the participants gained skills in giving feedback on computers. Last, the instructions for serving as a “rater” and a “ratee” were provided to the participants, and the confidentiality and anonymity of responses were ensured.

As the training was taking place, the first step was to ask each employee to identify names of his or her peers and customers who had a work relationship with him/her, who could observe and give feedback to him/her, and on whom the employee could give feedback. In the next step, all of the supervisors and the researcher met and selected the “raters” and the “ratees” based on the employees’ name list, according to their work relationships. They were expected to be careful about the numbers of assigned “ratees” for each “rater”, because some people were addressed by

many employees to be a “rater”. In addition, the managers were selected to be assessed by all subordinates, and all the subordinates were selected to be assessed by their managers in this study. In the end, the assessors were selected amongst the participant’s customers, supervisors, peers, and subordinates. Each employee was assessed by him/herself, and at least four people from each rating source (customers, supervisors, peers, and subordinates). After the first training, related documents (articles, training presentations, booklets, etc.) were published on the organization’s Intranet.

After the first training programme came to an end, participants were instructed to confidentially assess their customers, supervisor, peers, and subordinates with the computerized questionnaire (based on the Arcelik Competency Model), within the following month. When all of the assessments were completed, the second training programme commenced. In this programme, participants were informed about giving and receiving effective feedback, and defensive behaviours towards negative feedback. In addition, the training also addressed how to use feedback results to prepare a personal development plan (through the use of case studies). The documents (booklets, training presentations, articles about giving and receiving feedback, and personal development planning) used in the training programme were again published on the Intranet to help participants access them easily.

As soon as the second phases of the training sessions were completed, feedback reports were shared with the participants. Employees received only their personal feedback reports, but the managers were able to access both their own and their staff’s feedback reports, as the supervisors were thought to have the responsibility to support employees in preparing their personal development plan, whenever the employees requested. That is why when the employee needs his/her manager’s supervision, the manager could access his/her staff’s feedback under the control of/by permission of that employee. The feedback sources were anonymous to all recipients. After sharing the personal feedback reports, the participants were expected to prepare their own personal development plans. The human resources department, the related document that was published on the Intranet, and supervisors could be accessed for help to prepare the development plans. Six months later, after the personal development plans were completed, OCTS and CPAPS were given to the participants again by the human resources department of the company.

In order to shed light on the study, a year later, 360-DFS was applied a second time and the new data were collected from the subjects by OCTS and CPAPS. Upon completion of the study, a manipulation check was made. However, this was not actually a manipulation check; it was to assess the effectiveness of manipulation as all of the subjects were asked about the effectiveness of 360-DFS on communication in the organization, the

performance appraisal system, and the organizational culture with the manipulation check. The manipulation check consisted of four questions: (1) "To what percentage do you believe that 360-DFS has had an effect on communication in the organization?" (2) "To what percentage do you believe that 360-DFS has had an effect on your perception of the present (180-degree) performance appraisal system?" (3) "To what percentage do you believe that 360-DFS has effect on organizational context?" and (4) "Which parts of 360-DFS application (director's letter, training, being rated by others, feedback, personal development plan) do you believe to be effective? Please rate the percentage for each factor from the total percentage." Taking the findings of the study into account, it was noticeable that subjects believed 360-DFS had an effect on communication in the organization (73%), performance appraisal system (82%), and the organizational context (71%). In relation to the results, the subjects reported that the training (26%), feedback (24.1%), personal development plans (20.3%), being rated by others (19.4%), and the director's letter (10.2%) were effective factors in the organizational context, communication, and performance appraisal system in the organization.

RESULTS

In this longitudinal study, the effect of the 360-DFS application on organizational context (employees' perceptions on support, power, hierarchical, achievement cultures), and communication and performance appraisal system perception in the organization were analysed.

Statistical analysis considered each measured variable separately (each cultural typology score and the communication and performance appraisal perceptions) as the dependent variable in analyses of variance (one-way ANOVAs) with a repeated measure (360-degree feedback application: Time 1, Time 2, and Time 3). The repeated measure on the 360-DFS application was defined as: Time 1 is pre-360-DFS application, Time 2 is initial 360-DFS application, and Time 3 is the latter 360-DFS application.

As shown in Table 1, among the four culture typology variables, the participants' perception on achievement culture were effected by the 360-DFS application, $F(2, 230) = 3.869$, $p = .022$. Upon examining the 360-DFS application (Time 1, Time 2, Time 3) mean ratings with the Tukey test, it was seen that the participants rated that their organization had a higher achievement culture in the later application, $M(\text{Time } 3) = 3.584$, $SD = 0.798$, than both the pre-application, $M(\text{Time } 1) = 3.305$, $SD = 0.738$, and the initial application, $M(\text{Time } 2) = 3.298$, $SD = 0.798$. These results established support for Hypothesis 1, assuming an increase in the perception of achievement culture after the application of the 360-DFS.

TABLE 1
The effect of 360-DFS on the subscales of cultural perception, communication, and performance of appraisal system in the organization

<i>Source</i>	<i>df</i>	<i>Mean square</i>	<i>F</i>	<i>Sig.</i>
Achievement culture				
360 degree feedback system appl.	2	2.05	3.87	.02
Error	228	0.53		
Total	231			
Corrected total	230			
Support culture				
360 degree feedback system appl.	2	1.67	6.24	.002
Error	228	0.48		
Total	231			
Corrected total	230			
Hierarchical culture				
360 degree feedback system appl.	2	0.19	0.42	.65
Error	228	0.45		
Total	231			
Corrected total	230			
Power culture				
360 degree feedback system appl.	2	0.12	0.29	.75
Error	228	0.41		
Total	231			
Corrected total	230			
Communication perception				
360 degree feedback system appl.	2	10.57	27.63	.00
Error	228	0.38		
Total	231			
Corrected total	230			
Performance appraisal perception				
360 degree feedback system appl.	2	8.33	25.38	.00
Error	228	0.33		
Total	231			
Corrected total	230			

On the other hand, with respect to Hypothesis 2, the 360-DFS application had an effect on participants' perceptions on support culture, $F(2, 230) = 6.237, p = .002$. Upon examining the 360-DFS application (Time 1, Time 2, and Time 3) mean ratings with the Tukey test, it was seen that both in initial, $M(\text{Time } 2) = 3.627, SD = 0.503$, and in subsequent application, $M(\text{Time } 3) = 3.674, SD = 0.520$, the participant rated their organization as more supportive than the pre-360-DFS application, $M(\text{Time } 1) = 3.341, SD = 0.821$.

Although Hypothesis 3 predicted that the 360-DFS process would reduce perceptions of the organization as having a power culture, results did not suggest any significant effect of the 360-DFS application on perception of power culture in this study.

On the other hand, Hypotheses 4 and 5 predicted that participants' perceptions of both communication and performance appraisal systems in the organization were affected by the 360-DFS implementation. As expected, the analysis yielded a significant 360-DFS main effect, $F(2, 230) = 27.63$, $p = .000$, on participants' perception of communication. Ratings were significantly raised through the implementation. Upon examining the 360-DFS application mean ratings with the Tukey test, it was seen that both in initial, $M(\text{Time } 2) = 3.719$, $SD = 0.541$, and in the latter, $M(\text{Time } 3) = 3.434$, $SD = 0.646$, applications participants rated their organization as having a more communicative atmosphere than before, $M(\text{Time } 1) = 2.985$, $SD = 0.660$.

Furthermore, participants' perception of the performance appraisal system in the organization was significantly affected by 360-DFS, $F(2, 230) = 25.383$, $p = .000$. Contrary to the communication results, but in line with the prediction, employees' perceptions of the effectiveness of the present performance appraisal system in the organization decreased over time. The Tukey test showed that the participants perceptions of performance appraisal in initial and in the following 360-DFS application, $M(\text{Time } 2) = 3.277$, $SD = 0.338$, $M(\text{Time } 3) = 3.075$, $SD = 0.759$, were lower than the pre-application, $M(\text{Time } 1) = 3.719$, $SD = 0.541$. The results, therefore, established support for Hypotheses 4 and 5.

DISCUSSION

The present longitudinal study investigated the impact of 360-DFS on organizational context (culture and climate) and related it to the perception of communication and the effectiveness of an organization's performance appraisal system. At a first glance (from Table 2 the means of cultural perception at Time 1, 2, and 3), at the beginning of the study, the cultural perceptions of employees were more or less equal in support, achievement, and hierarchical culture, but not in power culture, in the organization. After implementation, 360-DFS was found to have an effect on achievement and support culture perceptions; however, there was no significant effect on perceptions for the other cultural typologies assessed (power and hierarchical). In addition, 360-DFS showed the predicted influences both on the perception regarding communication atmosphere and effectiveness of the performance appraisal system.

The findings revealed that employees' perception of the organization as having a support culture was raised after the initial application of 360-DFS.

TABLE 2
Means and standard deviations of subscales of cultural perceptions, communication,
and performance appraisal system across time periods

	<i>Time 1</i>		<i>Time 2</i>		<i>Time 3</i>		<i>Total SD</i>
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	
Achievement culture	3.31	0.74	3.30	0.64	3.58	0.80	0.74
Support culture	3.34	0.82	3.63	0.50	3.67	0.52	0.65
Hierarchical culture	3.29	0.71	3.39	0.59	3.32	0.70	0.67
Power culture	2.11	0.70	2.14	0.61	2.19	0.63	0.65
Communication perception	2.99	0.66	3.72	0.54	3.44	0.65	0.69
Performance appraisal perception	3.72	0.54	3.28	0.34	3.08	0.76	0.63

A possible explanation for this finding involving support culture is that 360-DFS may provide new opportunities for people to help one another and otherwise to interact (e.g., to have conversations) and thus build or strengthen relationships. Allocation of everyday tasks and responsibilities do not always provide employees with much opportunity to assist one another in personal and professional development, and a 360-DFS system can serve as a provider of such an opportunity in a way that can be comfortable and rewarding. Another explanation may be that this study was conducted in Turkey, which has been described as being high on collectivism and power distance as compared with western cultures (Bodur & Kabasakal, 2002; Boyacigiller, 2000; Hofstede, 1980). Due to this context, the perceptual change in support culture may be faster than the other cultural perceptions.

On the other hand, the effects of 360-DFS on achievement culture perception increased after the subsequent application. This finding can be explained by the fact that the subjects reaped the benefits of mutual feedback on their work results after the initial application. They made, for example, personal development plans to develop their competencies, and new work skills based on feedback. Then, they could attain their work goals more easily. The employees, as a whole, experienced successful work results. An important point to emerge here is that the organizational success and personal success paralleled the second application the following year. Another key point is that the organization reached its goals effectively and experienced satisfactory work results, which in turn led the employees to perceive their organization as having more achievement culture than before.

It was interesting to find that there was a more rapid increase in the perception of support culture as compared with the other cultural perceptions. After the initial application, there was an increase in the support culture perception, and then after the latter application there was another increase in achievement culture perception. The sequence of cultural perceptual changes can be explained by Schneider, Gunnarson, and

Niles-Jolly's (1994) point of view. They state that when there is a practical change in an organization, such as the application of 360-DFS, employees observe what happens to them and around them. They, then, draw conclusions about their organization's priorities. Accordingly, they set their own priorities. These perceptions, therefore, provide them with direction and orientation about where they should focus their energies and competencies, which becomes a major factor in creating a climate. Besides, in this study, support culture perception was the most interpersonal part of the cultural model that was used. The important point to emerge is that change in organizational context starts with the interpersonal part of organization, like the climate creation of Schneider et al.'s statements. Again, according to Schneider et al., observing and interpreting actions in an organization, employees are able to explain why things are the way they are, and why the organization focuses on certain priorities. Culture, then, stems from employees' interpretations of the assumptions, values, and philosophies that produce the climates they experience. Culture is created and transmitted mainly through employees sharing their interpretations of events. In this study, change in achievement culture occurred following the second application of the 360-DFS. Achievement culture perception is not defined in terms of interpersonal relationship and interpersonal perception, but in terms of the overall organizational orientation (the organization's success orientation). Here, it can be concluded that after the employees' interpretation of the 360-DFS philosophies, and sharing of their experiences on 360-DFS, the perception on achievement culture raises in the way Schneider et al. stated.

At the end of study, it was found unexpectedly that there was no change in power culture perception after the 360-DFS application. Ayca and Kanungo's (2000) intercultural study showed that Turkey has a more patriarchal culture than western countries. Ronen (1986) also described Turkish organizations as having centralized decision making, highly personalized, strong leadership, and limited delegation. Therefore, a decrease in power culture perception may be too difficult in Turkish organizations. Moreover, it is known that changing the organizational context (culture and climate) is very difficult (Schein, 1985b, 1990). Any attempt to change organizational context requires enough time for the people to understand the new things and create behavioural patterns for the desired change. The current study was carried out over a period of 3 years, so the results could have changed if the study had been continued for a fourth, or a fifth year. In other words, a longer time period could ensure that the people reap the benefits of mutual feedback, and feedback from all working levels of the organization would weaken the authority's perceived pressure and the perception of the organization as having power culture over time.

On the other hand, the results for the communication perception of the employees and managers in the organization can be explained by means of the communication opportunities provided by 360-DFS, which enables people to talk to each other about their personal development, share personal views, and so forth. As with other favourable findings, it seems likely that reasonably *sensitive* and otherwise effective implementation of the 360-DFS was necessary for obtaining this effect. For example, feedback, the director's letter, and training programmes targeting the commitment of the employees were important tools for an effective 360-DFS implementation in this study. Moreover, creating a trusting atmosphere to give, receive, and share the feedback for employees is crucial in this kind of implementation. Anonymity of the responses was also ensured from the beginning to the end of the study. In addition to that, the managers participated in this system as "raters" and "ratees" like all the other members of the organization. This participation may have an additive function in creating a trustful atmosphere in the organization and in the perceptions of leaders' sincerity. Moreover, open sources like training materials on the Intranet facilitated the employees to plan personal development by using their own feedback. It is also known that organizational context (culture and climate) is closely tied to communication in an organization (Lawler et al., 1974; Muchinsky, 1977). A change, therefore, in a cultural context is also felt in the communication of an organization.

Lastly, 360-DFS application showed an effect on the perception about the effectiveness of performance appraisal system in the organization, indicating that the perception relative to the effectiveness of the existing performance appraisal system in the organization was affected negatively after the 360-DFS application. This finding is consistent with the expectations of the researcher. It can be explained in terms of awareness of 360-DFS that makes employees realize the deficiency of the present performance appraisal system (180 degree), and this finding may be the reflection of the present appraisal system's complexity. Moreover, this finding also establishes support for the researchers who insist on the 360-DFS as a tool for performance appraisal (Antonioni, 1996; Atwater et al., 2002; Atwater & Yammarino, 1992; Edwards & Ewen, 1996; Lepsinger & Lucia, 1998; Levy et al., 1998; Waldman & Atwater, 1998), and also for those who insist on it as a tool for individual and organizational development (Atwater & Waldman, 1998; Burke et al., 1985; Church et al., 1995, 2001; Church & Wacławski, 1999; Dalton, 1996; Day, 2001; Walker & Smither, 1999).

Limitations of the study

Because this study relied heavily on employee perception for its data, the level of employee trust in that 360-DFS implementation and data collection

should be addressed. In this study, before the initiation, all project steps, milestones, commitment strategies, training programmes, and materials had been prepared for implementation. This detailed preparation of the project and anonymity of results enhanced the trust and commitment of employees to this project, and hence enabled them to conform to the schedule. Since the human resources department of the organization performed similar surveys and collected data from the employees, the participants did not know they were involved in the research; they simply thought that it was a project of the human resources department for the organization. This thought reduced biased responses on the research scales. However, for this reason the organization was taken as a whole in the research and all white-collar workers were included. Therefore the researcher could not use a control group in this study, which is a limitation on the internal validity of the research. Hence, the study could be designed with control groups to increase the internal validity in the future.

CONCLUSION

This study has offered some evidence, based on statistical analysis in a longitudinal design of culture change following the implementation of 360-DFS. To interpret this evidence, it seemed worthwhile to reconsider the context and process of implementing a 360-DFS, because a sensitive, respectful, well-planned, and well-supported (through training) implementation process seemed necessary in order to obtain the findings.

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